Plan of Study

Appendix A: Related Projects and Programs of Sacramento River Diversion Project

U.S. Bureau of Reclamation

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APPENDIX A:
RELATED PROJECTS AND PROGRAMS OF THE SACRAMENTO RIVER DIVERSION PROJECT

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SUMMARY

The proposed Sacramento River Diversion Project (Project) has a long history of development involving cooperation of many agencies. The proposed Project is related to many previous and on-going efforts in the American River basin, the greater Sacramento metropolitan, and California statewide. This Appendix summarizes the major projects and programs in the northern American River basin and others that may significantly relate to the proposed Project. Programs/project that are not discussed in the Appendix include water master plans of local water purveyors, other localized, agency-specific efforts, and programs/projects in other regions that might be related to the Project through the operations of the Central Valley Project (CVP) and the State Water Project (SWP).

The programs and projects reviewed in the Appendix can be categorized into the following seven groups:

1. **Programs and projects that are previously completed and provide the basis for the proposed Project.** These programs and projects include the ARWRI and the Water Forum Agreement. The local sponsors of the proposed Project are all signatories of the Water Forum Agreement, which provides planning and operational guidelines for many on-going regional efforts and supports the development of the proposed Project. The ARWRI evaluated the alternatives to meet the project 2030 demands in Sutter, Placer, Sacramento, El Dorado and San Joaquin Counties, focusing on the comparison between a new surface reservoir and a large conjunctive use program. The Water Forum Agreement focuses on the diversions from the American River, the groundwater conjunctive use opportunities and water conservation opportunities in the North American River basin, and habitat management efforts in the lower American River. The analyses resulting in the Water Forum Agreement are largely based on the ARWRI, but with more refinements on local operations and issues. The operation of the proposed Project is not addressed in the Water Forum Agreement.

2. **Programs and projects that are ongoing and provide the basis for the proposed Project.** These programs and projects mainly relate to the needed contractual agreements for the implementation of the Sacramento River Diversion Project including the *Central Valley Project Long-term Contract Renewal*, and other inter-agency agreements for water sale, water wheeling, and project operation. Many of these agreements would need modifications in order to implement the diversion on the Sacramento River and additional agreements among agencies and local entities would be required to implement the proposed Project.

3. **Programs and projects that are ongoing to implement parts of the Water Forum Agreement, of which the proposed Project could be an integrated component**. These programs and projects include the *American River Basin Cooperative Agencies Regional Water Master Plan*, and *PCWA/Northridge Groundwater Stabilization Program*. These programs and projects were developed based on the Water Forum Agreement, and the proposed Project would provide alternative water sources to the area for dry year protection and system reliability.

4. **Programs and projects that are ongoing to implement parts of the Water Forum Agreement, whose subsequent efforts would provide backup solutions if the proposed Project cannot be implemented**. These programs and projects include the *PCWA American River Pump Station Project* (the subsequent efforts would expand the capacity of diversion) and *City of Sacramento Water Facilities Expansion Project* (the subsequent efforts would restore part of the dry-year reductions at existing diversion locations or develop alternative sources of water to provide needed system redundancy).

5. **Programs and projects that are ongoing and could affect or be affected by the planning and implementation of the proposed Project.** These programs and projects include the *Natomas American Basin Fish Screen and Habitat Improvement Project*. The proposed Project would use one of the consolidated Natomas diversions, the Elkhorn Diversion. It could benefit the environment and the project financing if the two projects are combined or at least coordinated in an integral manner.

6. **Programs and projects that are ongoing but may have limited effects on the proposed Project**. These programs and projects include the *U.S. Corps of Engineers American River Watershed Project*. The proposed Project may need to take into consideration of the levee and channel modification in Natomas area for the American River Watershed Project.

7. **Programs and projects that are ongoing on a statewide or Sacramento Valley-wide level and provide operational criteria and standards for statewide water supply operation or new water supply scenarios in the future**. These programs and projects include the *CALFED Bay-Delta Program*, *Central Valley Project Improvement Act*, and *Sacramento and San Joaquin River Basins Comprehensive Study*. These programs and projects may impact the statewide water supply; however, the recommendations from these programs and projects are still under development. The progress of these programs and projects would need to be monitored for any possible impacts to the construction and operation of the proposed Project.

PROGRAMS/PROJECTS THAT WERE PREVIOUSLY COMPLETED AND PROVIDE THE BASIS FOR THE SACRAMENTO RIVER DIVERSION PROJECT

American River Water Resources Investigation, U.S. Bureau of Reclamation

Overview

Reclamation completed the American River Water Resources Investigation (ARWRI) in 1997 and prepared a Planning Report and the Final Environmental Impact Statement (EIS). The objectives of the ARWRI include meeting projected year 2030 water demands in five counties (El Dorado, Placer, Sacramento, San Joaquin, and Sutter) and stabilizing the groundwater basins.

Three alternatives have been analyzed in the ARWRI EIS: No-Action Alternative, Auburn Dam Alternative, and Conjunctive Use Alternative. The Auburn Dam Alternative and Conjunctive Use Alternative include components that could be implemented by local water purveyors including wastewater reclamation, conservation, new and/or expanded surface water diversions, and new surface water storage. The principal difference between these alternatives is that source of new yield. The Conjunctive Use Alternative has a large conjunctive use component; Auburn Dam component is the main source of additional water supply in the Auburn Dam Alternative.

A number of components are included in both alternatives. These components are referred to as "Common Elements" that include a Feather River Diversion of up to an annual diversion up to 74,000 acre-feet (AF) to serve M&I demands in western Placer County. This diversion would supply 20,000 acre-feet per year (AF/year) to the City of Roseville (Roseville), 29,000 AF/year to the Northridge Water District (Northridge), and 25,000 AF/year to other PCWA service areas. The diverted water would represent an exchange of PCWA's Middle Fork Project water on the American River for the delivery from the State Water Project.

Conjunctive Use Alternative

The Conjunctive Use Alternative was identified as the environmentally superior alternative in protecting the Nation's environment. This designation is based on the potential impacts associated with the Auburn Dam component being determined as significantly greater than the larger conjunctive use diversions during larger flow events. Reclamation has not identified a Federal role for meeting the future water demands within the ARWRI study area. Therefore, a preferred federal program has not been identified. Reclamation's position for implementing Common Elements is described in the ARWRI EIS as follows:

> *"The Common Elements are being considered by the local agencies as a first step towards meeting their long-term needs. Reclamation embraces the local support for the Common Elements, with future component selection to be conducted by the local agencies. Implementation of the Common Elements would require cooperation between purveyors in the regional water community. Although Reclamation is a part of the regional water community, Reclamation will take no action on an individual component, or group of components, without a local sponsor request for Reclamation participation. Reclamation could then provide technical assistance or undertake a specific federal action. If a local sponsor requests Reclamation participation then Reclamation would first ensure that it has authority from Congress to undertake the action (i.e., a Federal role is defined, authorization exists, and the activity is funded). A determination would also be made whether the action was feasible from the national standpoint. A feasibility determination would typically include conducting project specific environmental analysis, and a NED[1] or similar economic analysis, pursuant to appropriate Federal statutes or new authorization."*

Sacramento Area Water Forum

The Sacramento Area Water Forum (Water Forum) was formed in 1993 by a diverse group of water managers, business and agricultural leaders, environmentalists, citizen groups, and local governments in Sacramento, Placer Sutter, and El Dorado counties. The coequal objectives of the Water Forum are: (1) to provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) to preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. In January 2000, the stakeholders of the Water Forum adopted the Water Forum Agreement. The Water Forum Agreement describes a conjunctive use program to meet the region's water demands and provide environmental benefits to the Lower American River.

The Water Forum Agreement includes several new and expanded diversions that are relevant to the Sacramento River Diversion Project. On the American River, these include an increase in PCWA's diversion increase of 27,000 AF/year with dry-year replacement water, a Northridge's diversion of 29,000 AF/year in wet and average years, and an increase in Roseville's diversion increase of 35,100 AF/year with dry-year reduction and replacement water. On the Sacramento River, these include an increased diversion for the City of Sacramento[2] and a PCWA's diversion of 35,000 AF/year. There was no Water Forum limitation to these two diversions.

[1] National Economic Development. The benefit evaluation procedures are specified in *Economic and Environmental Guidelines for Water and Related Land Resources Implementation Studies* (1983).

[2] The modeling efforts that supported the Water Forum Agreement assumes the City of Sacramento diverting 290 cfs from the Sacramento River and the volumetric increase of 85,600 AF/year from the American and Sacramento Rivers.

A programmatic Environmental Impact Report (EIR) for the Water Forum Agreement was completed in October 1999. The EIR indicated the Water Forum Plan (WFP) is the environmentally preferred alternative with significant and potentially significant impacts to the Lower American River and Folsom Reservoir including effects to certain fisheries, recreational opportunities, and cultural resources. Potential mitigation measures were identified as a part of the Habitat Mitigation Element of the Water Forum Agreement.

Among seven alternatives to the WFP evaluated in the EIR, Alternative 1 is the most similar to the proposed Sacramento River Diversion Project. In Alternative 1, up to 78,000 AF/year of surface water diversions were moved from the Lower American River to the Sacramento River to reduce impacts on the American River. These diversions were to be made at a new diversion at Elkhorn for Northridge (29,000 AF/year) and a new diversion on the Sacramento River at Freeport for South County Agricultural Water Users (35,000 AF/year) and the City of Folsom (14,000 AF/year). Alternative 1 would have impacts similar to those of the WFP, but slightly reduced impacts to fisheries in Folsom lake and the Lower American River.

Many elements in the Water Forum Agreement are related to the proposed Sacramento River Diversion Project. Additional details are provided in the following project-specific discussion.

PROGRAMS/PROJECTS THAT ARE ON-GOING AND PROVIDE THE BASIS FOR THE SACRAMENTO RIVER DIVERSION PROJECT

Central Valley Project Long-term Contract Renewal

Section 3404(c) of the CVPIA provides for long-term renewal of interim and existing long-term CVP water service contracts following completion of appropriate environmental documentation, including a programmatic environmental impact statement (PEIS). The PEIS, completed pursuant to the National Environmental Policy Act (NEPA), analyzes the direct and indirect impacts and benefits of implementing the CVPIA and the potential renewal of all existing contracts. The American River Unit has been negotiating three interim contracts and eight binding contracts with water purveyors in the American River Basin (including PCWA and Roseville). An EIS is currently under preparation for the long-term contract renewal in the American River Unit and is scheduled for completion by March 2002. The process includes the consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fishery Service (NMFS) on Endangered Species Act (ESA). A Record of Decision will be issued afterward.

Placer County Water Agency

In anticipation of the construction of Auburn Dam, PCWA entered into a contract with Reclamation in 1970 for a contract entitlement of up to 117,000 AF/year of CVP water delivered at Auburn Reservoir or at other mutually agreed location or locations. The construction of Auburn Dam was suspended in 1977. PCWA has not yet taken delivery of any water under this contract. The long-term contract negotiation between PCWA and Reclamation to amend the CVP water service contract has been completed.

The current negotiated 25-year agreement between the Reclamation and PCWA stipulates a 35,000 AF/year supply for irrigation and/or M&I water at Folsom Dam and any additional point or points of delivery either on CVP facilities or other locations mutually agreed to in writing by both parties. This long-term contract does not affect the contract between the United States and the PCWA dated February 20, 1963 relating to the operation of the PCWA's MFP Reservoirs.

City of Roseville

The long-term contract negotiation with Roseville has been completed. The negotiated contract stipulates 32,000 AF/year of M&I water be delivered to Roseville at the outlet from the 84-inch pipeline leading from Folsom pumping plant to Hinkle Reservoir and any additional point or points of delivery either on the American River Division Project facilities or another mutually agreed locations. The delivery is subject to the CVP M&I water shortage policy.

Sacramento County Water Agency CVP Long-term Water Service Contract

The CVP long-term contract of Sacramento County Water Agency currently under negotiation stipulates a delivery of 22,000 AF/year of M&I water for the Sacramento County Water Agency, including a subcontracted amount of 7,000 acre-feet of water for the City of Folsom. The points of delivery include the Sacramento River Water Treatment Plant owned by the City of Sacramento, an intake at the location proposed for the Freeport Regional Diversion Project, an intake on the American River near the confluence with the Sacramento River, Folsom Dam (for the City of Folsom), and other mutually agreed locations.

East Bay Municipal Utility District CVP Amendatory Contract

In 1970 EBMUD contracted with the United States for CVP water delivery from the Lower American River into the Folsom South Canal at Nimbus Dam. Parties including Sacramento County, the Environmental Defense Fund, and Save the American River Association sued EBMUD over concerns about how this increased diversion would further impact the Lower American River fishery. At the end of the 17-year lawsuit, Judge Richard Hodge reasoned that because EBMUD had reasonable and feasible alternatives for meeting its needs, it could use the Folsom South Canal diversion only when specified flows would remain in the river. These flows have come to be known as the Hodge Flows. EBMUD has not received any water under this contract.

EBMUD and Reclamation evaluated many alternatives for diverting EBMUD's CVP entitlement and prepared an environmental impact report (EIR) in 1997. Two supplements to the EIR were completed in 2000. The federal action supported by this EIR/EIS is the execution of an amendment to the existing 1970 EBMUD/Reclamation water service contract. The amendatory contract will provide for two alternative diversions: an EBMUD's diversion on the American River near the City of Sacramento's landfill, or a joint diversion at Freeport on the Sacramento River. The amendatory contract will prohibit deliveries of water diverted at Nimbus Dam as provided in the 1970 contract. However, if permitting and necessary agreements for another point of diversion are not completed by July 2002, EBMUD will have the right to revert to delivery at Nimbus Dam. The amendatory contract stipulates that the delivery at Freeport shall not exceed 133,000 AF/year when the predicted EBMUD's total system storage on October 1 is less than 500,000 AF, and the delivery shall be limited to 165,000 AF in total over a consecutive three-year period. The diversion shall be subject to Reclamation's M&I water shortage policy. EBMUD is currently in negotiating with the County of Sacramento to facilitate the joint development of the Freeport Regional Diversion Project.

Reclamation Warren Act Contracts

The "Warren Act of 1911" provides for delivery of non-CVP water using excess capacity of Reclamation facilities. Currently, Roseville and Northridge have contracts with Reclamation to transfer their purchased water from PCWA through Reclamation's American River Division facilities. These Warren Act contracts are renewed annually.

City of Roseville

The current negotiated contract for year 2002 stipulates that up to 8,000 AF/year of non-CVP water (including a five-percent conveyance loss) can be wheeled through Reclamation's facilities when excess capacity is available. The source of non-CVP water is PCWA's MFP, provided through a separate contract between PCWA and the City of Roseville. The point or points of delivery could be on the American River Division Project facilities or other mutually agreed locations.

Northridge Water District

The current negotiated contract stipulates that up to 29,000 AF/year of non-CVP water (including a five-percent conveyance loss) can be wheeled through Reclamation's facilities when excess capacity is available. The source of non-CVP water is PCWA's MFP, provided through a separate contract between PCWA and Northridge. The delivery would be made when the projected March through November unimpaired inflow into Folsom Reservoir is greater than 950,000 acre-feet. The point or points of delivery could be on the American River Division Project facilities or other mutually agreed locations.

Operating Contract for the Construction of Folsom Dam

City of Sacramento

Reclamation and the City of Sacramento entered into an operating contract on June 28, 1957 that is related to Folsom and Nimbus Dams and their related works and to diversions of water by the City of Sacramento. The contract stipulates that the diversion from the American River by the City of Sacramento shall not exceed the rate of 675 cfs. The maximum annual diversion that can be made from the American River is specified by a gradually increased schedule in the contract. For the year 2001, the maximum is 140,500 AF, of which 31,000 AF would be from the Folsom Lake. The corresponding amounts of water in year 2030 are 245,000 and 90,000 acre-feet, respectively. The maximal diversion rate on the Sacramento River is 225 cfs.

The City of Sacramento has reduced its diversion on the American River over growing environmental concerns in the Lower American River and anticipates picking up the reduced diversion at a downstream location on the Sacramento River (Sacramento River Water Treatment Plant). Therefore, the above-mentioned maximum diversion rates on each river may not be strictly enforced, but the maximum of total diversion rate and volume will be observed.

Placer County Water District Water Sale Contracts

City of Roseville

The latest agreement between PCWA and the City of Roseville was signed on January 17, 1996 for the sale of up to 30,000 AF/year of MFP water. The City of Roseville would use the 30,000 AF/year of purchased water and the 32,000 AF/year of CVP entitlements to meet the city's future water demand. The Water Forum Agreement caps the city's annual diversion on the American River at 54,900 AF/year. Therefore, the City of Roseville cannot exercise about 7,100 AF/year of water in the framework of Water Forum. The amount of water is considered the operational buffer of water supply by Roseville.

The Water Forum Agreement also stipulates the release of replacement water to mitigate the increased 38,900 AF/year diversion in drier and driest year above the 1995 baseline (19,800 AF/year). This

replacement water will not be needed when the projected March through November unimpaired inflow into Folsom Lake is more than 950,000 AF. When the projected unimpaired inflow is less than 400,000 acre-feet, the replacement water of 20,000 AF would be facilitated through the re-operation of PCWA's MFP. When the projected unimpaired flow is between 950,000 and 400,000 AF, the needed replacement water would be determined proportionally between 0 and 20,000 AF.

Northridge Water District

The latest agreement between PCWA and Northridge was signed on June 1, 2000 for the sale of up to 29,000 AF/year for the PCWA/Northridge Groundwater Stabilization Project. The agreement stipulates a gradually increased schedule of annual delivery that would reach the maximum 29,000 AF in the year 2014. The water would be delivered through Reclamation facilities at Folsom Dam and thus, a Warren Act contract between Northridge and Reclamation is needed.

The agreement was executed after the SWRCB issued water right orders on May 24, 2000 to extend the place of use for PCWA's MFP water rights to that part of Sacramento County that include Northridge's service area. The SWRCB orders state that the water delivery would need to satisfy the provisions in all related settlement agreements with DWR, Reclamation and other local water purveyors and individuals. Most of the provisions were captured in the Water Forum Agreement. During the first 10-year period of the Water Forum Agreement, water shall be delivered to Northridge only in years when the projected March through November unimpaired inflow into Folsom Reservoir is greater than 950,000 acre-feet. In December through February following a March through November period when the unimpaired inflow into Folsom Reservoir was less than 1,600,000 acre-feet, water shall be delivered to Northridge when and after water is being released from Folsom Reservoir for flood protection.

After the ten-year period, water shall be delivered to Northridge only in years when the projected March through November unimpaired inflow into Folsom Reservoir is greater than 1,600,000 acre-feet. In December through February following a March through November period when the unimpaired inflow into Folsom Reservoir was less than 1,600,000 acre-feet, water shall be delivered to Northridge when and after water is being released from Folsom Reservoir for flood protection.

If Northridge is able to take delivery of Sacramento River water through the Sacramento River Pipeline, Northridge will divert from Folsom Reservoir only in years when the projected March through November unimpaired inflow into Folsom reservoir is greater than 1,600,000 acre-feet.

If Northridge is not able to take delivery of Sacramento River water through the Sacramento River Pipeline within the ten-year period, the SWRCB would hold a hearing if requested by Northridge, the City of Sacramento, County of Sacramento, Friends of the River, Sierra Club or Save the American River Association. The purposes of the hearing would be to add or revise conditions to PCWA's MFP water rights for the necessary mitigation. The hearing would not consider the compromise by the Water Forum parties in the Water Forum Agreement.

Refill criteria are also specified in the settlement agreement with DWR. When Term 91[3] is in effect, PCWA would deliver to Northridge only water previously appropriated to storage and PCWA would not appropriate water to storage to refill any storage in its MFP reservoirs vacated on account of a previous use of stored water in Northridge's service area. The refill criteria would become additional constraints in MFP's operation.

[3] Term 91 occurs when the SWP and CVP need to release from their reservoir storage to satisfy the in-basin demands.

PROGRAMS/PROJECTS THAT ARE ON-GOING TO IMPLEMENT PARTS OF THE WATER FORUM AGREEMENT AND WITHIN WHICH THE SACRAMENTO RIVER DIVERSION PROJECT COULD BE AN INTEGRATED COMPONENT

Groundwater Stabilization Project, Placer County Water Agency/Northridge Water District

Groundwater levels in the groundwater basin underlying Sacramento County and Placer County north of the American River have been declining for decades. This decline is a result of over-reliance on groundwater for municipal, industrial and agricultural water supply in northern Sacramento County and western Placer County. As of 1990, groundwater levels in the basin had dropped to 61 feet below mean sea level (MSL) in the cone of depression underlying McClellan Air Force Base (AFB). The decline of groundwater levels has increased construction and operational costs for groundwater use and posed a potential threat to groundwater quality.

PCWA and Northridge entered into a 25-year contract on August 21, 1995 to implement a groundwater stabilization project. Under that contract, PCWA agreed to provide surface water from its Middle Fork Project (MFP) to replace Northridge's use of up to 29,000 AF/year of groundwater. The MFP water would be released to Folsom Lake, and delivered to Northridge through the cooperative operations of San Juan Water District and Reclamation. The EIR of the groundwater stabilization project published in 1998 concluded there would be no significant environmental impacts for the proposed project. A Sacramento River alternative, which was analyzed as an alternative allowed Northridge to divert from the Sacramento River at a future diversion point in Natomas. Such a project would provide distinct environmental advantages to the aquatic and other water-related resources in Folsom Lake and the Lower American River, relative to the diversion from Folsom Lake.

As stipulated in the Water Forum Agreement, Northridge and other signatories have agreed that for an interim ten-year period, Northridge will divert PCWA water in years when the projected March through November unimpaired inflow to Folsom Lake is greater than 950,000 AF. After the ten year period, unless the SWRCB issues a subsequent order, Northridge would divert up to 29,000 AF/year of water from Folsom Lake under the PCWA/Northridge contract only in years when the projected March through November unimpaired inflow into Folsom Reservoir is greater than 1,600,000 acre-feet. In addition, Alternative 1 in the Water Forum Agreement EIR suggests that additional environmental benefits to the Lower American River could be achieved by moving the diversions for Northridge, EBMUD, and the City of Sacramento to the Sacramento River.

California State Water Resources Control Board (SWRCB) issued orders on May 24, 2000 to approve a change in the place of use of PCWA's MFP water rights to include the area served by Northridge. The orders stipulate the approved PCWA-Northridge water transfer would be subject to the provisions in the settlement agreements, which are largely based on the Water Forum Agreement. A revised contract between PCWA and Northridge for the Groundwater Stabilization Project was singed on June 1, 2000 to incorporate the provisions in SWRCB orders. (See discussions in *PCWA/Northridge Water Sale Contract*.)

Regional Water Master Plan, American River Basin Cooperative Agencies

Water purveyors in southern Placer County and northern Sacramento County formed the American River Basin Cooperating Agencies (Cooperating Agencies) and initiated work on implementation of the regional conjunctive use program envisioned by the Water Forum. The objective of this effort, referred to as the Regional Water Master Plan (RWMP), is development of equitable, cost-effective

water resource management strategies for enhancing water supply reliability and operational flexibility for water users of Folsom Lake, the Lower American River, and the connected groundwater basin.

The Cooperating Agencies are largely comprised of the same water purveyors that make up the Sacramento Groundwater Authority (SGA), the joint powers authority (JPA) charged with the protection and regulation of the groundwater basin underlying the service areas of the Cooperating Agencies. SGA was formed pursuant to the recommendation of the Water Forum. SGA is currently developing and implementing a groundwater management program that incorporates both the RWMP and the Water Forum Agreement.

The goals and objectives of the Cooperating Agencies and SGA are fully compatible. Consequently, the two organizations formed a "Partnership" to coordinate development and implementation of the regional water resources management strategies identified in the RWMP as cost-effectively and efficiently as possible. The Partnership encompasses water users in both Sacramento County and Placer County including City of Roseville, City of Sacramento, Natomas Mutual Water Company, Northridge, and PCWA.

Although the focus of the RWMP has been on meeting the water supply availability and reliability needs of Placer County and Sacramento County, implementation of the water resource management strategies currently under investigation by the Partnership could also provide statewide water supply and environmental benefits. In particular, the nexus of current levels of groundwater development, substantial surface water rights and contract entitlements, and the potential for integrated operation of Folsom Lake with the local groundwater basin presents an opportunity for a regional groundwater banking and surface water exchange program in northern Sacramento County and southern Placer County.

Phases I and II of the RWMP involved the development of an over-all program concept, a conceptual facilities plan, and a preliminary institutional/economic/contractual framework for implementing the program. Phase II included a pilot conjunctive use program (Pilot Program) that demonstrated the viability of a conjunctive use project in the region. The Pilot Program, which involved storing and recovering (by exchange) 2,100 acre-feet of water, included Reclamation and the Sacramento Area Flood Control Agency (SAFCA) as partners.

Upon completion of Phase II of the RWMP (August 2001), the Cooperating Agencies will sunset as an organization and SGA will continue the Partnership's mission. This will occur in conjunction with the newly formed Regional Water Authority (RWA), a JPA charged with serving and representing the regional water supply interests of its members by protecting the reliability, availability, and quality of resources. Membership in the SGA and the RWA are similar.

Phase III of the RWMP will be undertaken by SGA and will include the investigation of larger, longer-term conjunctive use activities and the resolution of associated issues. In support of such activities, SGA has begun development of a groundwater monitoring network through the "Data Management System" (DMS) project. SGA is also pursuing an arrangement with the Environmental Water Account (EWA), an initiative of the CALFED Bay-Delta Program (CALFED), for implementation of an expanded pilot program. Phase III will also include facility pre-design and design, environmental documentation and permitting, completion of the preliminary institutional/economic/contractual framework for implementing a larger program, and stakeholder outreach and communication. Successful completion of these activities will provide a solid foundation on which to build a large-scale conjunctive use program with greater regional and statewide benefits, including increased dry-year Delta export, improvement of Bay-Delta water quality, or enhancement of instream flows for environmental purposes.

A diversion off the Sacramento River for PCWA, Northridge, and others is included in the RWMP and the associated planning-level analyses. The Sacramento River Diversion Project will give the agencies' the ability to provide water supplies from the Sacramento River to southern Placer County and northern Sacramento County, thereby creating an operational "link" between it and the American River. Such a link facilitates the RWMP's conjunctive use program by providing additional system flexibility and reliability.

PROGRAMS/PROJECTS THAT ARE ON-GOING TO IMPLEMENT PARTS OF THE WATER FORUM AGREEMENT, AND OF WHICH THE SUBSEQUENT EFFORTS WOULD PROVIDE BACKUP SOLUTIONS IF THE SACRAMENTO RIVER DIVERSION PROJECT CANNOT BE IMPLEMENTED

American River Pump Station Project, Placer County Water Agency

In 1965 Congress authorized the construction of Auburn Dam on the North Fork of the American River near the City of Auburn. Construction began in 1967 and it was suspended in 1977 due to seismic concerns.

Before construction was suspended, Reclamation sought a Land Purchase Agreement with PCWA to acquire canyon lands needed for the Auburn Dam project. As part of the Land Purchase Agreement, PCWA's 50-cfs pump station facility was removed to permit construction of Auburn Dam. The agreement included a provision for an interim pumping facility or alternative water supply until Auburn Dam was completed. The Land Purchase Agreement obligated Reclamation to deliver up to 25,000 AF/year at a rate up to 50 cfs.

Reclamation has annually installed temporary pumps at PCWA's original pump station. However, this temporary pump station is operational from approximately April to November due to potential high flow conditions from December through March. With this limitation, the maximum annual diversion for the seasonal pump station is approximately 19,300 AF. This water supply scenario is not sufficient or reliable to meet PCWA's water supply requirements.

The proposed American River Pump Station Project will result in a permanent pump station located approximately 600 feet northwest of the Auburn Dam bypass tunnel inlet. The pump station will provide a year-round MFP water to PCWA with a design capacity of 100 cfs. This is equivalent to an annual supply of up to 35,500 AF.

The Water Forum Agreement requires replacement water to mitigate the projected increased diversion above the 1995 baseline. The replacement water would not be needed when the projected March through November unimpaired inflow into Folsom Lake is more than 950,000 acre-feet. When the projected unimpaired inflow is less than 400,000 acre-feet, the replacement water of 27,000 acre-feet would be facilitated through the re-operation of the MFP. When the projected unimpaired flow is between 950,000 and 400,000 acre-feet, the needed replacement water would be calculated by linear interpolation between 0 and 27,000 acre-feet. The replacement water cannot be diverted or stored until it reaches the confluence with the Sacramento River.

PCWA and Reclamation completed a draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the American River Pump Station Project in August 2001. The proposed project would result in potentially significant and unavoidable impacts to water supply of the CVP and the State Water Project (SWP), recreation, and air quality (construction) impacts. However, through County of Origin Protection and the Watershed of Origin Protection, PCWA would be guaranteed a

priority right to water that is senior to the CVP and SWP. Any future expansion from the current analyzed 35,500-AF/year diversion would require environmental regulatory review and approvals.

PCWA is designing the American River Pump Station to permit expansion from 100 cfs to 200 cfs to accommodate an additional demand of 35,000 AF/year as an alternative to the Sacramento River Diversion Project. However, because Reclamation cannot provide water supply at the American River Pump Station, the diversion would be from PCWA's MFP. Since the Sacramento River Diversion Project is not currently consistent with the water rights and CVP entitlements held by PCWA, preserving the opportunity to expand the American River Pump Station Project with minimal local environmental disruption is prudent.

Public Law (PL) 101-514 authorizes and directs Reclamation to enter into a long-term water service contract with the El Dorado County Water Agency for up to 15,000 AF/year, of which up to 7,500 acre-feet per year is planned to be subcontracted to Georgetown Divide Public Utility District (GDPUD). GDPUD has requested that PCWA design its intake and pump station so that its capacity could be expanded by up to 25 cfs to accommodate GDPUD's future needs. Therefore, the American River Pump Station is being designed for a potential ultimate diversion capacity of 225 cfs.

City of Sacramento Water Facilities Expansion Project

The City of Sacramento is currently expanding their Fairbairn and Sacramento River Water Treatment Plants to meet increasing demand in their service area. The Fairbairn Water Treatment Plant (Fairbairn WTP) is being expanded from a capacity of about 100 MGD to 200 MGD. The Sacramento River Water Treatment Plant (Sacramento River WTP) is being expanded from the current capacity of about 100 MGD to 160 MGD. The City of Sacramento prepared an EIR in 1998 for the proposed facilities expansion. Expansion of these two water treatment plants is scheduled to be completed in year 2004. Additional expansions after this expansion project would be significantly more expensive because of the potential high cost for land acquisition in the city.

Expansion of Sacramento River WTP will enable diversions to be shifted from the American River to the Sacramento River in order to alleviate the environmental concerns over using new treatment capacity to divert American River during low flow conditions. The City of Sacramento is not bound by Judge Hodge's 1990 decision rendered in *Environmental Defense Fund et al. v. East Bay Municipal Utility*. However, in the Water Forum Agreement the City of Sacramento agreed to restrict their diversion at the Fairbairn WTP when the Hodge Flow criteria apply.[4] The diversion rules at the Fairbairn WTP to which the City of Sacramento agreed are summarized below.

- When flow bypassing the diversion at the Fairbairn WTP exceeds the Hodge flow criteria, the City of Sacramento will divert up to 310 cfs (200 MGD).

- Whenever flow bypassing the diversion at the Fairbairn WTP is less than the Hodge flow criteria, the City of Sacramento will divert at a rate no greater than:

January through May	120 cfs (78 MGD)
June through August	155 cfs (100 MGD)
September	120 cfs (78 MGD)
October through December	100 cfs (65 MGD)

[4] Parties to the litigation (*Environmental Defense Fund et al. v. East Bay Municipal Utility District*) can not divert water from the American River unless instream flows measure at least 2,000 cfs from October 15 through February; 3,000 cfs from March through June; and 1,750 cfs from July through October 14.

- In extremely dry years, the City of Sacramento will limit its diversions at the Fairbairn WTP to not greater than 155 cfs (100 MGD) and not greater than 50,000 acre-feet per year.

The City of Sacramento will meet additional water demands by diversions at other locations and/or other sources during the periods when bypass flow at the Fairbairn WTP is less than the Hodge flow criteria. The expansion of Sacramento River WTP allows the City of Sacramento to divert a portion of reduced diversion at Fairbairn WTP when the Hodge Flow criteria apply. However, the maximum reduction of 100 MGD at Fairbairn WTP would not be fully recovered even after the expansion of Sacramento River WTP. Accordingly, the development of redundant facilities is important.

Two options to develop the system redundancy were considered in the EIR on a programmatic level: (1) the construction of a diversion point on the Sacramento River and a water treatment plant in the north Natomas area, or (2) the addition of groundwater pumping facilities and expansion of the areas served by groundwater. Due to the sustainable yield and quality concerns of groundwater resources and the requirements for many satellite water treatment plants for extracted groundwater, the diversion in the north Natomas area is the more economic and feasible long-term solution for the city. However, this additional capacity would not be required until the capacity of the City's expanded water production system was maximized.

PROGRAMS/PROJECTS THAT ARE ON-GOING AND COULD AFFECT, OR BE AFFECTED, BY THE PLANNING AND IMPLEMENTATION OF THE SACRAMENTO RIVER DIVERSION PROJECT

American Basin Fish Screen and Habitat Improvement Project, Natomas Mutual Water Company

The American Basin Fish Screen Project will consolidate five diversions of the Natomas Mutual Water Company (Natomas) and several local riparian-right diversions on the Sacramento River into two diversions with positive barrier fish screens. The project will also eliminate a dam at the mouth of the Natomas Cross Canal and consolidate several smaller private diversions by riparian right holders along the same reach of the Sacramento River. Consolidation of diversions will benefit the environment and fishery in the Sacramento River.

Natomas completed a feasibility study for the project in November 2000. The report concluded the preferred alternative consisted of two diversions, one at Sankey Road and a second at Elkhorn Road. Natomas is currently completing the preliminary design and preparing an environmental assessment (EA) for the project. The efforts are expected to be completed in December 2001. The estimated completion date for final design and permitting is in September 2002. Construction is anticipated to be completed in June 2004.

It could be advantageous for the proposed Sacramento River Diversion Project to utilize one of the two consolidated diversions of Natomas to reduce environmental impacts for facility construction and to reduce project costs. However, currently there is no agreement in place for the use of these diversions for the proposed Sacramento River Diversion Project. Because of the relatively advanced stage of the Natomas project, it will require an agreements from Reclamation and other resource agencies to incorporate the proposed Sacramento River Diversion Project.

PROGRAMS/PROJECTS THAT ARE ON-GOING BUT HAVE LIMITED RELATIONS TO THE SACRAMENTO RIVER DIVERSION PROJECT

American River Watershed Project, U.S. Army Corps of Engineers

Current efforts to reduce the risk of flooding to the City of Sacramento from the American River began as a result of the floods of 1986. The U.S. Army Corps of Engineers (Corps), in partner with the non-Federal sponsors, Sacramento Area Flood Control Agency (SAFCA) and the State of California Reclamation Board, has prepared two comprehensive studies and several comprehensive alternatives for a long-term solution to the flooding problems in Sacramento. Although none has yet gained consensus, Congress has authorized two specific projects, one of which is the American River Watershed Project (Common Features).

American River Common Features

This project primarily includes levee modification work along the lower American River and Sacramento River. The Common Features have been separated into the lower American River area and the Natomas area, and are being implemented separately. Two problems have surfaced concerning the Natomas area features: (1) the environmental compensation for disrupting the giant garter snake habitat, and (2) an unforeseen under-seepage problem. In order to prevent these problems from delaying the progress of the Common Features Project, the Corps has decided to proceed with the implementation of the lower American River features. Once issues regarding the Natomas features are resolved, a second decision document will be prepared to support the implementation of those features. The Corps has instructed Natomas to proceed with their diversion consolidation project without waiting for the decision.

The Common Features are currently authorized under WRDA 1996 and WRDA 1999, and include the following elements:

- Approximately 23.9 miles of slurry wall in the levees along the lower American River;
- Approximately 12.2 miles of levee modifications along the east bank of the Sacramento River downstream from the Natomas Cross Canal;
- Three telemeter stream flow gauges upstream from the Folsom Reservoir (complete);
- Modifications to the flood warning system along the Lower American River;
- Raising the left bank of the non-Federal levee upstream of the Mayhew Drain for a distance of 4,000 feet by an average of 2.5 feet.
- Raising the right bank of the American River levee for 12,000 feet from Northrop Avenue to about 1,500 feet upstream of Howe Avenue Bridge by an average of 1 foot.
- Modifying the south levee of the Natomas Cross Canal for a distance of 5 miles to ensure that the south levee is consistent with the level of protection provided by the authorized levee along the east bank of the Sacramento River.
- Modifying the north levee of the Natomas Cross Canal for a distance of 5 miles to ensure that the height of the levee is equivalent to the height of the south levee.

- Installing closure structure to the existing Mayhew Drain culvert and pumps to prevent backup of floodwater on Folsom Boulevard.

- Reshape right bank levee of the Natomas East Main Drain to provide 2H to 1V slope from 500 feet upstream to 1,300 feet upstream of State Highway 160.

- Flatten the landside slope of the north levee of the American River from 300 feet west of Jacob Lane. Offset the levee toward the waterside approximately 5 to 8 feet for a distance of 1,400 and 3,00 feet, respectively.

Raising Folsom Dam

The Corps has recently conducted a feasibility study and prepared a draft EIS for the alternative of raising Folsom Dam as a supplement to the previous investigations. Raising Folsom Dam and thus increasing the flood pool would accomplish the additional flood protection. The project would not impact water supply because the proposed changes focus on the flood pool increase by raising the dam.

Folsom Outlet Modification

The project has been authorized by the Congress and is under design by the Corps. The estimated completion time is during 2008 to 2009. The Folsom Outlet Modification Project is to enlarge the current outlets of Folsom Reservoir to accommodate flow up to 115,000 cfs, the capacity of Lower American River. Currently, the eight outlets of Folsom Reservoir can pass about 30,000 cfs in total. During flooding conditions, the remaining release would be realized through spills.

The project would not impact water supply since it is only affecting the controlled releases during floods. There would be no impact to water supply operation during the construction. An Environmental Assessment has been completed and should be available through the Corps.

PROGRAMS/PROJECTS THAT ARE ON-GOING ON A STATEWIDE OR SACRAMENTO VALLEY-WIDE LEVEL AND MAY RESULT IN NEW OPERATIONAL CRITERIA AND STANDARDS OR NEW WATER SUPPLY SCENARIOS

Central Valley Project Improvement Act

On October 30, 1992, the President signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575), which included title XXXIV, the Central Valley Project Improvement Act (CVPIA). The CVPIA amends previous authorizations of the California Central Valley Project to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement having an equal priority with power generation.

The Federal action taken by the Department of the Interior (Interior) is to implement provisions of the CVPIA. The general purposes of the CVPIA, and the action proposed by Interior, were identified by Congress in Section 3402 of CVPIA, as follows:

- To protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins of California;
- To address impacts of the CVP on fish, wildlife, and associated habitats;

- To improve the operational flexibility of the CVP;
- To increase water-related benefits provided by the CVP to the State of California through expanded use of voluntary water transfers and improved water conservation;
- To contribute to the State of California's interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; and
- To achieve a reasonable balance among competing demands for use of CVP water, including the requirements of fish and wildlife, agriculture, municipal and industrial and power contractors.

The above purposes respond to a congressionally identified need to modify the existing water operations and physical facilities of the CVP. As such, ten major areas of change include:

- 800,000 acre-feet of water dedicated to fish and wildlife annually;
- Tiered water pricing applicable to new and renewed contracts;
- Water transfers provision, including sale of water to users outside the CVP service area;
- Special efforts to restore anadromous fish population by 2002;
- Restoration financed by water and power users for habitat restoration and enhancement and water and land acquisitions;
- No new water contracts until fish and wildlife goals achieved;
- No contract renewals until completion of a Programmatic Environmental Impact Statement (PEIS);
- Terms of contracts reduced from 40 to 25 years with renewal at the discretion of the Secretary of the Interior;
- Installation of the temperature control device at Shasta Dam;
- Implementation of fish passage measures at Red Bluff Diversion Dam;
- Firm water supplies for Central Valley wildlife refuges; and
- Development of a plan to increase CVP yield.

Completed in October 1999, the Final PEIS analyzed the impacts of implementing various provisions of the CVPIA in the Central Valley and coastal areas of California over a 30-year study period. The Record of Decision (ROD) was completed in January 2001 and is a hybrid of the alternatives analyzed in the Final PEIS. Efforts continue on detailed evaluations of the aforementioned actions and the specific projects and programs through which they will be implemented (e.g., Habitat Restoration Program, Anadromous Fish Screen Program, CVP Water Service Contract Renewals).

CALFED Bay-Delta Program

The CALFED Bay-Delta Program was established to develop a long-term comprehensive plan that would restore ecological health and improve water management for the beneficial uses of the Bay-Delta system. The four primary goals of the plan are: 1) to restore the ecological health of a fragile and depleted Bay-Delta estuary; 2) to improve the water supply reliability for the State's farms and growing cities that draw water from the Delta and its tributaries; 3) to protect drinking water quality; and 4) to protect the Delta levees that ensure its integrity as a conveyance and ecosystem. Followed by the issuance of draft Programmatic EIS/EIR in June 1999, the CALFED agencies have entered into a Programmatic Record of Decision (ROD) in August 2000 to implement programs including levee system integrity, water quality, ecosystem restoration, water use efficiency, water transfer, watershed, storage, and conveyance programs. The implementation of these programs would reshape the future operations of water supply projects and habitat management in California.

Among all the components implemented or studied through CALFED process, the Sacramento-San Joaquin Delta Water Quality Control Plan (WQCP) and its related efforts may be most related to the Sacramento River Diversion Project because they would define the obligations of CVP, SWP and all diverters in meeting the flow and water quality objectives in the Delta.

The SWRCB adopted the WQCP to protect the fishery and estuary dependent species and the M&I water supply in the Delta. SWRCB considers that many of the objectives in the WQCP are best implemented by making changes in the flow of water and in the operation of facilities that move water. Decision 1641 and many interim decisions have been issued to implement portions of the WQCP. SWRCB has completed an EIR in November 1999 to conclude that, among other things, the implementation would have unavoidable impacts on water supply. The current on-going Bay-Delta Program Phase 8 effort involves the negotiation among all water right holders in the Sacramento Valley to share the responsibility in meeting the flow objectives in the WQCP. The negotiation is currently integrated in the CALFED Bay-Delta Program. Until the Phase 8 negotiation completes, DWR and Reclamation are responsible for meeting most of the flow objectives specified in the WQCP except the salinity objectives in the southern Delta. The on-going Sacramento River Basinwide Water Management Plan is part of the Phase 8 negotiation.

As part of the Phase 8 negotiation and the preparation efforts for CVP long-term contract renewal, Sacramento River Settlement Contractors (SRSCs) and Reclamation entered into the "Memorandum of Understanding" between the SRSCs and the United States of America for the Preparation of Data in Aid of the Renewal of Settlement Contracts (MOU). Among the terms specified in the January 1997 MOU was the need to prepare a Basinwide Water Management Plan (BWMP). The intent of the planning effort was to address specific issues outlined in the MOU, provide a common set of data to serve as the basis for contract renewal negotiations, document district, sub-basin, and basinwide water requirements and available supplies, and identify management tools and potential approaches to match supply and requirements while identifying opportunities for environmental enhancement.

In the BWMP, water management options were developed at both the district and sub-basin/regional level to increase the flexibility of meeting water requirements. The district level options include canal lining, conveyance systems automation, conjunctive water management and groundwater use, drainwater reuse and management, water measurement, pricing structure, CVP project water supply purchases, and water transfers. The regional level options include new surface storage, conjunctive water management and groundwater use, water transfers and drainwater reuse and management. Implementation of the recommendations identified in the BWMP will be influenced by a range of factors, including ongoing processes and programs (e.g., CALFED), district bylaws and board policies, site conditions, net benefits ratio, availability of funding assistance, and regional institutional cooperation.

Sacramento and San Joaquin River Basins Comprehensive Study, U.S. Army Corps of Engineers/State Reclamation Board

The Sacramento and San Joaquin River Basins Comprehensive Study (Comprehensive Study) was authorized by the U.S. Congress and California State Legislature to reduce flood damages and restore related ecosystem values within the Central Valley. A multi-agency team, whose primary partners are the Corps and The Reclamation Board of the State of California, began work on this study in 1998. The ongoing feasibility study will develop comprehensive master plans incorporating a variety of flood storage, conveyance, environmental restoration, and floodplain management measures. The Comprehensive Study seeks to accomplish its goals of flood control and environmental restoration through both physical and institutional changes.

The Comprehensive Study will concentrate on solving problems associated with the main channels of the Sacramento and San Joaquin Rivers, the floodplains of these rivers and their major tributaries. A full range of structural and nonstructural components for flood damage reduction and ecosystem restoration will be evaluated. In the vicinity of the proposed Sacramento River Diversion, these components may include levee strengthening or raising, levee realignment or reconstruction, development of transient flood storage in neighboring floodplain lands, or measures to improve or restore riparian habitat in the area (e.g. native re-vegetation, designated habitat areas, or habitat preserves). These and other measures implemented elsewhere may increase or decrease flood flow or stage along this reach. Some elements of the alternative plans to increase the flood storage in the existing reservoirs may have water supply impacts related to the Sacramento River Diversion Project, such as the resulting CVP yield. Any negative impacts to water supply would be accompanied by appropriate mitigation measures, and the existing level of flood protection provided to any given area in the study either will improve or remain unchanged. The Comprehensive Study is coordinating its recommendations with numerous other programs and studies, and maintaining a consistent dialogue with public stakeholders.

Several documents have been produced by the study to date, including the Post Flood Assessment (March 1999), the Phase 1 Documentation Report (March 1999), the F3 In-Progress Review Report (November 2000), and the F4 In-Progress Review Report (October 2001). A fully integrated feasibility report and programmatic EIS/EIR, which will describe several alternative plans and the recommended master plan, is scheduled for completion in March 2002. Following public review, the final feasibility report would undergo State, Agency and Corps of Engineers headquarters review in early 2003. The final report would be recommended to Congress for programmatic authorization and implementation under the Water Resources Development Act of 2004.